DOCUMENT RESUME

ED 226 170 CE 035 014

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TITLE Research Questions in Trade and Industrial Education.
PUB DATE Dec 82
NOTE 51p.; Presented at the American Vocational Association Convention (St. Louis, MO, December 1982).
PUB TYPE Guides - Non-Classroom Use (055) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Access to Education; Advisory Committees; Articulation (Education); Career Counseling; Career Education; Curriculum; Curriculum Development; Delivery Systems; Disabilities; Educational Finance; *Educational Research; Education Work Relationship; Graduate Surveys; Instructional Design; Job Placement; Job Skills; Mainstreaming; National Surveys; Nontraditional Occupations; Postsecondary Education; Program Development; Program Improvement; Questionnaires; *Research Needs; School Counseling; Secondary Education; Sex Fairness; Teacher Characteristics; Teacher Education; Teacher Improvement; *Trade and Industrial Education; Vocational Followup

ABSTRACT

Results are reported of a nationwide survey to identify and categorize research questions related to the trade and industrial education area. (Respondents were members of the Policy and Planning Committee and the Research Committee of the American Vocational Association's Trade and Industrial Division, state and territorial supervisors of trade and industrial education, and department chairpersons and program leaders of trade and industrial education at colleges and universities.) A rank ordering of the research questions by frequency and percentage is provided in a table. Findings are then presented according to the 12 categories used to organize the research questions as they were provided by the respondents. Some questions are listed under more than one category. Research problems are then categorized under advisory committees, articulation, curriculum delivery/instruction, placement, followup, funding, guidance/counseling, special needs, program planning/access, sex equity, and teacher preparation/upgrading. The questionnaire is appended. (YLB)

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ED226170

A Report On

RESEARCH QUESTIONS IN TRADE AND INDUSTRIAL EDUCATION

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A Survey Activity
of the
American Vocational Association
Trade and Industrial Education Research Council

CE035014

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December, 1982

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

> It appears to me that...the difficulties and disagreements, of which history is full, are mainly due to a very simple cause: namely to the attempt to answer questions, without first discovering precisely what question it is which you desire to answer.
>
> George Edward Moore, 1903

The following report is the result of a nationwide survey conducted by an ad hoc research team of the American Vocational Association Trade and Industrial Education Research Council. Members of this research team included Richard Crosby, University of Louisville; Edward Kahler, University of Georgia; Curtis Finch, Virginia Polytechnical Institute; Thomas Walker, Indiana University of Pennsylvania, and Chester Wichowski, Rutgers University. Dr. Wichowski served as team leader.

The topic of this investigation was identified during the December 4, 1981 meeting of the American Vocational Association Trade and Industrial Education Research Council, Atlanta, Georgia. The procedural design used to conduct this research effort was also developed at this meeting.

The Population

The population used in this investigation was comprised of the following groups:

1. The Policy and Planning Committee of the American Vocational Association's Trade and Industrial Education Division (N=11),

2. The Research Committee of the American Vocational Association's Trade and Industrial Education Division (N=20),

3. State supervisors of trade and industrial education in the United States and territorial supervisors in the U. S. Virgin Islands and Puerto Rico (N=52), and

4. Department chairpersons and program leaders of trade and industrial education at colleges and universities (N=208).

The policy and planning and research committee members were identified through membership listings supplied by their respective chairpersons. The state and territorial supervisors were identified through a national directory prepared by Vocational Industrial Clubs of America Inc., Leesburg, Virginia, while the college and university department chairpersons and program leaders were identified through the directory of the National Association of Industrial and Technical Educators.

All members of the population (N=291) were sent a transmittal letter, a copy of the survey instrument, and a postage paid return addressed envelope. Copies of the instrument and transmittal letter are included in Appendix A. Twenty-six percent of the population (N=76) responded to the survey. No follow-up mailing was conducted.

The Research Instrument

An open ended single page questionnaire was specifically designed to collect data in this survey. Respondents were directed to provide a minimum of eight research questions related to the trade and industrial education area and to categorize these questions using the twelve categories provided.

Two categorized example research questions were provided as models for respondents.

The research instrument was conceptually formulated through a discussion among the five members of the ad hoc research team. A draft copy of the instrument and transmittal letter was later distributed among research team members for editing. Copies of the revised research instruments and transmittal letters, as they were used in this survey, are included in Appendix A.

The findings of this survey effort have been reported according to the twelve categories used to organize the research questions as they were provided by the respondents. It should be noted that in cases where a respondent categorized a research question in more than one category that question was listed in each category reported. A number of research questions provided by respondents are, therefore, listed more than once. Also, it should be noted that the research questions reported have been edited in order to eliminate excessive duplication within each category and to maintain a degree of style consistency. Care was exercised to preserve the original intent of each question as it was provided.

A rank order listing of the research questions, as they were categorized by the respondents, is included in Table 1. This table also provides the actual number and percentage of research questions in each of the 12 categories as they were received.

TABLE 1

Rank Order Listing of T & I Research Questions
by Frequency & Percentage - All Respondents

	Category	N	%
1.	Teacher Preparation/Upgrading	138	18.1%
2.	Delivery/Instruction	118	16.4%
3.	Curriculum	108	15.0%
4.	Program Planning/Access	67	9.3%
5.	Articulation	49	6.8%
6.	Placement	45	6.3%
7.	Follow-up	43	6.0%
8.	Guidance/Counseling	40	5.5%
9.	Funding	36	5.0%
10.	Special Needs	32	4.4%
11.	Advisory Committees	30	4.2%
12.	Sex Equity	15	2.1%
		721	99.1%

ADVISORY COMMITTEES

Research Problems Related to Trade and Industrial Education

What does industry really know or think about T & I Education?

How many T & I teachers actually use the advisory committee they have written on paper?

Do Pre-vocational skills contribute to success in a vocational program?

Is T & I education, pre-vocational education?

Where are the outstanding T & I teachers to be found?

What relationship exists between successful and unsuccessful advisory committees and student achievement?

How should we include computer application in T & I programs?

What is the profile of the on-site industry teacher?

To what extent is the advisory committee involved in curriculum planning and evaluation?

Do T & I instructors use the NNCCVTE network and if so, how?

How effective are advisory committees?

Why is the teacher turn-over rate higher for trade and industrial education than it is for other education specialties?

What new trade and industrial education programs will be needed in the 1990's?

What are the success factors needed by T & I instructors for the effective use of advisory committees?

How can we achieve effective participation by our advisory committees?

What are the distinguishing characteristics of members of the advisory committee?

To what extent do teachers of trade and industrial education influence funding for T & I education?

How will the microcomputer effect T & I education?

What are the indicators of a functional advisory committee?

How can T & I programs become more responsive to the changing needs of industry?

Are T & I teachers making effective use of advisory committees?

ADVISORY COMMITTEES

Research Problems Related to Trade and Industrial Education

What is the relationship between the degree of advisory committee involvement and program quality?

What can be done to assist instructors to make better use of advisory committees?

Why are T & I folks frightened of advisory committees?

Is there evidence that advisory councils have been successful in T & I program improvements?

Should advisory committees be drawn chiefly from the ranks of craftsmen or businessmen?

What is the general effectiveness of advisory committees at the various levels?

Do advisory committees significantly influence T & I programs?

How can more school administration support be developed for vocational education?

What are the relationships between successful advisory committees and teachers who have had education dealing with advisory committees?

ARTICULATION

Research Problems Related to Trade and Industrial Education

What is the current relationship of Industrial Arts, Trade and Industrial, and Technical Education?

What are some strategies for the implementation of open entry/exit programs?

What model provides for optimum articulation between programs?

How can computer-assisted instruction be incorporated into conventional programs of industrial education to improve productivity?

What are the best strategies for articulating trade and industrial education programs with the industrial community?

What should be the record keeping system in articulating between secondary/post-secondary vocational schools?

Should T & I education be provided at the post secondary rather than the secondary school level?

Can T & I teach for higher technology? Can outdated T & I programs be eliminated?

Do state Department supervisors (directors) of T & I education help or hinder?

Do we have articulation or attrition?

Do vocational teachers or non-vocational teachers best present vocational-technical education to students?

To what extent does the placement of a poor student in a particular job effect future job placement with the same company?

Do guidance/counseling personnel help or hinder enrollment in industrial arts and vocational technical education programs?

How much advance standing will post-secondary institutions credit toward their programs for students who were enrolled in secondary programs?

How do we establish articulated programs within and between districts.

How can vocational education certification among states be standardized?

To what extent are colleges/universities crediting work at technical institutes toward their degree programs?

What are the characteristics of the various state models for provisional personnel development?

ARTICULATION

Research Problems Related to Trade and Industrial Education

Is there an effective articulation process between area vocational schools and colleges in reference to technical teacher education requirements?

How can vocational education and academic education be unified into one delivery system?

What is the relationship between vocational preparation and selection for apprenticeship programs?

To what extent do T & I teachers counsel students on a formal basis?

How can we articulate vocational programs between comprehensive high schools and area vocational schools?

Is T & I education delivered better at the secondary or post-secondary level?

How can post-secondary schools better prepare trainers/instructors for the industrial setting?

What ways do current educational programs meet the on-the-job training needs of industry?

What is an appropriate articulation model for secondary/post-secondary vocational education?

What are the computer literacy components of a T & I teacher education program?

What are the curriculum components of a technical training/HRD degree program housed in a traditional T & I program?

What part should traditional T & I play in an interdisciplinary curriculum designed to prepare industrial personnel with HRD/technical training?

What are the key factors in achieving positive articulation between secondary/post-secondary programs?

What program standards are common to all of T & I Education?

What are the specific training responsibilities of high schools and regional occupational/vocational technical centers?

How can we develop more unity in industrial, trade & industrial, and technical education?

What models of cooperative relationships exist between secondary vocational programs and trade union apprenticeship programs?

What relationship exists between industry and the local educational agency for training?

ARTICULATION

Research Problems Related to Trade and Industrial Education

How can community colleges and local schools justify the duplication of services?

What is the role of the advisory committee in trade & industrial education?

Is there a relationship between having graduated from a secondary T & I program and subsequent success in post-secondary technical programs?

Is the role of the instructor changing?

Where are there successful programs of secondary-post secondary articulation and what are the elements of success?

Are there identifiable criteria for determining curriculum articulation between secondary and post-secondary programs?

How can T & I educators raise the awareness of teachers from K through 12 as to the needs of craftsmen?

What articulation exists between secondary and post-secondary vocational schools?

How will we ever be able to close the gaps and overlaps in industrial education programs taught in different schools in the same locale?

Is there an effective articulation process between area vocational schools and colleges in reaching technical teacher education requirements?

What should be the record keeping system in articulating between secondary and post-secondary vocational education programs?

How can public relations be enhanced at federal, state, and local levels?

What is an appropriate articulation model for secondary/post-secondary vocational education?

CURRICULUM

Research Problems Related to Trade and Industrial Education

What is the status of program articulation between secondary and post secondary T & I programs?

What is the current relationship of IA, T & I, and technical education?

How do special needs students affect the 'average' T & I instructor?

What are some strategies for the implementation of metric measurement in T & I classes?

What are some strategies for the implementation of open-entry/exit programs?

Why aren't secondary trade and industrial education programs producing graduates that can fit right into work positions in the real world?

What has been the effect of various curriculum consortia (VTEC, etc.) on the professional training needs of trade and industrial education teachers?

What strategies/delivery modes are most effective in serving the adult part time learner?

Do pre-vocational skills contribute to success in a vocational program?

What is an appropriate reading level for teaching materials in trade and industry education programs?

Can trade and industry teach for higher technology? Can outdated trade and industry programs be eliminated?

Does competency based instruction work for trade and industry?

Do we (T & I) have competency based instruction or seat of the pants instruction?

How can VICA be totally integrated with local trade and industry programs?

What relationship exists between successful and unsuccessful advisory committees and student achievement?

What curriculum changes will develop as a result of the micro-computer?

To what extent does the placement of a poor student in a particular job effect future job placement with the same company?

How do we up-date curriculum?

How do faculty keep current with changes in technology?

Why are there no agreed upon curricula when there are so many consortia busy with this?

CURRICULUM

Research Problems Related to Trade and Industrial Education

Why has T & I Education moved toward a policy of general education rather than continued traditional skill development?

How can industrial arts education tie in with trade and industrial education to form a "career ladder" education program?

Are advisory councils effective in helping to update and keep programs current?

How much advanced standing will post-secondary institutions credit toward their porgrams for students who were enrolled in secondary programs?

How do we establish articulated programs with & between districts?

How can results of existing research be used to develop a more directive approach to teaching?

How should we include computer application in T & I programs?

What happened to the secondary school?

To what extent is the advisory committee involved in curriculum planning and evaluation?

Should secondary programs which are exploratory be called vocational education?

How many changes in technology in the field actually trigger equipment changes in vocational curricula?

How can we establish a computerized data bank of trade and industry subject matter competencies for students to be drawn upon when needed?

What services can vocational programs provide local industries that will result in mutual benefits?

To what extent is the growth of technology reflected in the curriculum (laser beam welding, robotics, C.N.C.)?

Does traditional or competency based instruction result in greater student placement, cost effectiveness, etc.?

What are the significant factors that influence an individual to choose a career in industrial education?

Should a prescribed curriculum be mandated for vocational education programs?

Which individuals make the best trade and industrial education teachers?

What are the necessary professional education courses needed by industry trained T & I instructors in order to become better teachers?

CURRICULUM

Research Problems Related to Trade and Industrial Education

What level of reading is required at entry and middle level employment for T & I occupations?

Has the EPDA federal program improved the quality of leadership in T & I education?

Are T & I education teachers currently being prepared to cope with requirements in regard to P.L. 94-142?

How can school systems implement technical upgrading of T & I teachers as industry does with employees?

What are the major distinguishing characteristics of trade and industry education programs at the secondary level, compared to Industrial Arts programs?

How does the T & I education curriculum content compare with industrial technology?

How can we upgrade our present vocational programs to include the high technologies?

How can we infuse career education information into public school curricula?

What is the most effective delivery method for T & I instruction (e.g. CBE, Co-Op, Cluster, etc.)?

What are the most effective methods of educating the handicapped in T & I programs?

How will the microcomputer effect trade and industrial education?

To what degree is special emphasis training (i.e., guidance counseling, sex equity, special needs) necessary for Trade and Industrial Education teachers?

What special training is being provided to T & I teacher education staffs to deal with special emphasis/contemporary issues?

How can post-secondary schools better prepare trainers/instructors for the industrial setting?

In what ways to current educational programs meet the on-the-job training needs of industry?

What are the commonalities and differences in curriculum for the major T & I program areas?

What is the relationship between levels of federal funding and the reduction of T & I programs?

What is the relationship between the degree of advisory committee involvement and program quality?

CURRICULUM

Research Problems Related to Trade and Industrial Education

What curriculum characteristics contribute to student achievement?

What factors contribute to the development of successful training programs for local business and industry by vocational schools?

What level of technological stability is necessary in order to undertake cost-effective curriculum development and revision activities?

What factors contribute to the development of successful articulation models between vocational schools and community college?

In what way does required career exploration experiences effect vocational decisions?

What technical skills will the T & I professional have to acquire by the year 2000?

Which existing T & I programs will be obsolete by the year 2000?

What new T & I programs will emerge in the year 2000?

What are the curriculum components of a technical training/HRD degree program housed in a traditional T & I program?

What part should traditional T & I play in an interdisciplinary curriculum designed to prepare industrial personnel with HRD/technical training?

What have been the components of CBVE that have been most difficult to evaluate?

What program standards are common to all of T & I education?

What are the specific training responsibilities of high schools and Regional Occupational/Vocational Technical Centers?

Where is the central data gathering center for industrial education?

Have industrial education occupational inventories been conducted in the past five years? If so, where can information be found?

Have task analyses of occupations in industrial education been conducted in the past 5 years? Where can they be obtained?

For what defense jobs should industrial education be training students?

How can we keep instructors current and up-to-date on what is happening in industry?

How can we develop more unity in industrial, trade, and industrial, and technical education?

How do we maintain course content consistent with the needs of industry?

CURRICULUM

Research Problems Related to Trade and Industrial Education

What are the most cost effective methods for securing equipment and for performing repairs and maintenance?

Is there evidence that advisory councils have been successful in T & I porgram improvements?

What relationships exist between industry and the local education agency for training?

How can the T & I curricula best be kept current to meet the demands of an ever-changing industry?

What correlation exists between "open" and "closed" student selection and employer satisfaction ratings?

What relationship exists between daily program operation and subsequent placement in apprenticeship programs?

Is there a correlation between having graduated from a secondary T & I program and subsequent success in post-secondary tech programs?

What correlation exists between program length and student placement/employer satisfaction?

What is the minimum time to train individuals for T & I type jobs?

What are the implications for national curricula in those T & I education areas that are universal (i.e. auto mechanic, watch repair, machine drafting)?

Which trade program best provides transferrable skills?

What factors contribute significantly to student achievement?

What transfer skills might be included in all trade programs or clusters of programs?

Are there identifiable criteria for determining curriculum articulation between secondary and post-secondary porgrams?

What feelings exist for nationwide competencies in T & I and what is the best method for development?

What is the correlation between student performance testing and class grades?

What are the most promising forms of alternate energy?

Is it possible to develop a cooperative relationship between vocational and general studies?

What prepared curriculum materials are currently being used by T & I teachers?

What are the basic problems or needs in the development of cooperative instruction?

Are trade and industry teachers using ready made or commercially prepared curriculum materials?

CURRICULUM

Research Problems Related to Trade and Industrial Education

How can the management of advisory councils be improved?

Is T & I education, pre-vocational education?

What are the guidance counseling duties of T & I teachers?

What is the profile of the on-site industry teacher?

What are the necessary professional education courses needed by industry trained Trade and Industrial education instructors in order to become better teachers?

What resources are available for industrial trainers to upgrade their skills?

What factors contribute to the development of successful training porgrams for local business and industry by vocational schools?

What are the components of cooperative skill exchanges between university faculties and their industrial peers?

What program standards are common to all of T & I Education?

How do we maintain course content consistent with the needs of industry?

DELIVERY/INSTRUCTION

Research Problems Related to Trade and Industrial Education

What are the characteristics of successful T & I instructors?

Are performance assessments of student work true measures of ability?

How up-to-date are T & I instructors?

How do special needs students affect the "average" T & I instructor?

What are some strategies for implementation of metric measurement in T & I classes?

What strategies/delivery modes are most effective in serving the adult part time learner?

What is the most effective delivery system for updating the technical skills of the T & I instructor?

What are the learning styles of trade and industrial education students?

Is competency based instruction a better delivery system than traditional instruction?

Can the cluster approach or the in-depth trade approach produce the best graduate and employee?

What should be the record keeping system in articulating between secondary and post secondary vocational schools?

What relationship exists between students exiting from a cluster program and those exiting from a single content program?

Is T & I education pre-vocational education?

Is open entry-open exit valid for T & I?

Does competency based instruction work for T & I?

Are students prepared to accept responsibility of employment?

What relationship exists between successful and unsuccessful advisory committees and student achievement?

Do vocational teachers or non-vocational teachers best present vocational technical education to students?

What curriculum changes will develop as a result of the microcomputer?

To what extent does the placement of a poor student in a particular job effect future job placement with the same company?

DELIVERY/INSTRUCTION

Research Problems Related to Trade and Industrial Education

What success factors do successful teacher educators possess and to what extent are they passed on to future teachers?

How can industrial arts education tie in with T & I education to form a "career ladder" education program?

What has T & I education done to make laboratories more accessible to the handicapped?

How should we include computer application in trade and industrial education programs?

Should secondary programs that are exploratory be called vocational education?

Do T & I teachers support competency based vocational education?

How many changes in technology in the field actually trigger changes in vocational curricula?

How can we establish a computerized data bank of T & I subject matter competencies for students?

What services can vocational programs provide local industries that will result in mutual benefits?

What relationship exists between good teachers and research productions?

Does traditional or competency-based instruction result in greater student placement, cost effectiveness, etc.?

What relationship exists between good teachers and the performance of students?

Should a prescribed curriculum be mandated for vocational education programs?

What are the necessary professional education courses needed by industry?

What are the necessary professional education courses needed by industry trained T & I instructors in order to become better teachers?

Does teacher preparation effect the attrition rate of T & I students?

What current relationships exist between T & I instructors and the more academically oriented teachers?

Has the EPDA federal program improved the quality of leadership in T & I education?

Is there an effective articulation process between area vocational schools and colleges in reference to technical teacher education requirements?

Where are special needs students employed after they leave school?

DELIVERY/INSTRUCTION

Research Problems Related to Trade and Industrial Education

What is the impact of computer and microprocessor technology upon T & I instruction?

How can we use the existing research on instructor expectations and student behaviors to the greatest extent in T & I training?

What are the major distinguishing characteristics between Trade and Industrial education and Industrial Arts education programs at the secondary level?

How does the T & I education curriculum content compare with industrial technology?

What relationship exists between a teacher's work experience and student achievement?

What effect does the pupil to teacher ration have on employment success?

Is T & I education delivered better at the secondary or post-secondary level?

What are the best approaches to recruiting and training T & I teachers?

What is the most effective delivery method for T & I instruction (e.g. CBE, Co-Op, Cluster, etc.)?

What are the most effective methods of educating the handicapped in T & I programs?

To what extent could T & I programs be delivered better in industry or in the military?

How will the microcomputer effect trade and industrial education?

What administrative sources can relieve teacher stress?

Which teacher behaviors influence student learning? (Secondary students, post-secondary students).

What relationships exist between teaching style and learning style?

What are the specific competencies required to function successfully as a cooperative education instructor?

What are the successful alternative methods of delivery for T & I teacher education (pre and inservice)?

What are the characteristics of successful T & I programs in urban areas with high concentrations of disadvantaged students and unskilled labor?

What are the factors that limit the entry of handicapped and disadvantaged students into trade and industrial education programs?

What are the most effective and relevant services being provided to special needs students?

Which techniques lead to a reduction of sex stereotyping factors in T & I education programs?

DELIVERY/INSTRUCTION

Research Problems Related to Trade and Industrial Education

What are successful methods of meeting the requirements of bilingual programs in T & I?

How can T & I programs become more responsive to the changing needs of industry?

Is a modular delivery system an effective way to deliver T & I instruction?

Do organizational development techniques effectively contribute to the curriculum development or revision process?

What is the relationship between the degree of advisory committee involvement and program quality?

What curriculum characteristics contribute to student achievement?

What factors contribute to the development of successful training programs for local business and industry by vocational schools?

What level of technological stability is necessary in order to undertake cost-effective curriculum development and revision activities?

What factors contribute to the development of successful articulation models between vocational schools and community colleges?

What are the components of cooperative skill exchanges between university faculties and their industrial peers?

How can we establish better linkage between T & I teacher education and industrial training?

How can we market T & I teacher education to more clients?

What components of CBVE have been the most difficult to evaluate?

What are some innovative approaches to teacher preparation for summer sessions?

What program standards are common to all of our high schools and Regional Occupational/Vocational Technical Centers?

Which methods of funding a program appear to obtain the most positive results?

What significant changes in T & I programs and services has occurred in the last 5 years as a direct result of federal dollars?

How can we devleop more unity in industrial-trade and Industrial-technology education?

What are the most promising measures for determining trade competence prior to employment of T & I teachers?

DELIVERY/INSTRUCTION

Research Problems Related to Trade and Industrial Education

Is there a recommended, national set of standards that govern the provision of vocational education programs?

How can T & I teachers be taught time managrment more effectively?

What and where are the successful funding avenues for updating and replacing equipment in T & I shops?

Is there evidence that appropriate over-all advisory councils have been successful in T & I program improvements?

What mehtods have received national endorsement for measuring quality level in vocational education programs?

To what extent are performance based instructional programs being used in T & I education?

Waht relationship exists between industry and the local education agency for training?

What should be the role of state consultants to local education units?

What is the role of apprenticeship training at the secondary T & I program level?

How can community colleges and local schools justify the duplication of services?

What correlation exists between "open" and "closed" student selection and employer satisfaction ratings?

What correlation exist between teachers' occupational experience and success of students in finding jobs?

What relationship exists between daily program operation and subsequent placement in apprenticeship programs?

What correlation exists between teachers' occupational experience and employers satisfaction of completers of programs?

Is there a relationship between having graduated from a secondary T & I program and post-secondary technical programs?

What are some teaching strategies for the limited English speaking?

Are there competency measures for vocational skill areas?

What community agencies can be utilized in training disadvantaged students?

Do personnel from trades make better teachers than graduates of colleges with little experience?

DELIVERY/INSTRUCTION

Research Problems Related to Trade and Industrial Education

What factors contribute the most significantly to student achievement?

What transfer skills might be included in all trade programs or clusters of programs?

How may state level personnel best assist the local program instructor in planning and development?

How effective are the various visual aid devices in instructing students?

What relationship exists between the success of the instructor in the classroom/ laboratory and the amount of involvement in professional organizations?

What relationship exists between projected instructor position needs and teacher preparation?

How efficient are the present inventory control systems in the T & I curricula?

What is the degree of student involvement in laboratory maintenance?

What is the extent of instructor involvement in institutional budget preparation?

What are the advantages of competency based instruction?

What are some strategies for implementing competency-based instruction?

How can alternate energy curricula be implemented?

Would it be feasible to develop a complete single curriculum package (lesson plans, etc.) for all vocational teachers?

What prepared curriculum materials are currently being used by T & I teachers?

Can interactive video and computer systems be effectively used as a supplement to shop work in trade and industry?

What level of reading is required at entry and middle level employment for T & I occupations?

What are the relationships between the success of the instructor in the classroom/ laboratory and the amount of involvement in the profession?

PLACEMENT

Research Problems Related to Trade and Industrial Education

Are special needs graduates being placed in the occupation for which they are trained?

What is the efficiency of federal funding in relation to job preparation and placement?

How does the declining enrollment after secondary high school effect accessability to vocational programs at occupational centers?

Do pre-vocational skills contribute to success in a vocational program?

What is the role of the teacher in job placement?

Are students prepared to accept the responsibility of employment?

What relationship exists between successful and unsuccessful advisory committees and student achievement?

Do vocational teachers or non-vocational teachers best present vocational technical education to students?

To what extent does the placement of a poor student in a particular job effect future job placement with the same company?

What advantage, if any, does sex have in obtaining initial employment?

How much advanced standing will post-secondary institutions credit toward their program for students that have been enrolled in a secondary vocational program?

What are some major factors that influence the placement of T & I graduates in educational institutions and industry?

Should secondary programs which are exploratory be called vocational education?

Do T & I instructors use the NNCCVTE network and, if so, how? If not, why not?

Why do students select a T & I field in secondary schools?

What instruments can be used to determine community needs?

What services can vocational programs provide local industries that will result in mutual benefits?

How can public relations be enhanced at federal, state, and local levels?

What are the necessary professional education courses needed by industry trained T & I instructors in order to become better teachers?

Why do students have the tendency to leave the jobs for which they were trained?

What is the status of T & I enrollments across the country?

PLACEMENT

Research Problems Related to Trade and Industrial Education

What is the relationship between vocational preparation and selection for apprenticeship programs?

What effect does the pupil to teacher ratio have on employment success?

How can T & I education eliminate sexism in its programs and in industry?

What are the most effective counseling tools to use in the selection and placement of T & I students in programs and jobs?

Is there a relationship between vocational preparation and job success?

How can T & I instructors be utilized more effectively in providing vocational guidance and development activities?

What is an appropriate articulation model for secondary--post-secondary vocational education?

What steps must be taken to recruit and retain secondary and post-secondary T & I professionals?

What program standards are common to all of T & I education?

What significant changes in T & I programs and services has occurred in the last 5 years as a direct result of federal dollars?

For what defense jobs should industrial education be training students?

How can more realistic guidance/counseling activities be developed?

Is there evidence that appropriate over-all advisory councils have been successful in improving T & I programs?

What relationship exists between industry and the local education agency for training?

What is the role of apprenticeship training at the secondary T & I program level?

Who has the responsibility for placement in present day vocational technical schools?

What correlation exists between student participation in VICA and subsequent employer satisfaction ratings?

What correlation exists between "open" and "closed" student selection and employer satisfaction ratings?

What relationship exists between daily program operation and subsequent placement in apprenticeship programs?

What are the minimal basic skill requirements for successful completion and placement from T & I programs?

PLACEMENT

Research Problems Related to Trade and Industrial Education

How successful are the handicapped in getting jobs after the completion of programs?

Should advisory committees be drawn chiefly from the ranks of craftsmen or businessmen?

What relationship exist between the success of the instructor in the classroom and the amount of his or her occupational experience?

What steps must be taken to recruit and retain secondary and post-secondary T & I professionals?

FOLLOW-UP

Research Problems Related to Trade and Industrial Education

Are special needs graduates being placed in the occupations for which they are being trained?

What is the efficiency of federal funding in relation to job preparation and placement?

How is follow-up information being used by trade and industrial education teachers?

How successful are T & I graduates ten years after training?

What relationship exists between successful and unsuccessful advisory committees and student achievement?

To what extent does the placement of a poor student in a particular job effect future job placement with the same company?

To what extent do guidance/counseling personnel effect enrollment in industrial arts and vocational technical education programs?

What advantage does sex have in obtaining initial employment?

What factors do successful teacher educators possess and do they get passed on to future teachers?

What is the relationship between job satisfaction and teacher retention in industrial education?

What are some major factors that influence the placement of trade and industrial education graduates in educational institutions and industry?

What instruments can be used to determine community needs?

How can public relations be enhanced at the federal, state, and local levels?

What models are available for a follow-up study of vocational and technical education graduates?

What level of reading is required at entry and middle level employment for trade and industrial occupations?

Why do students have the tendency to leave the jobs for which they were trained?

What is the status of trade and industrial enrollments across the country?

Where are special needs students employed after they leave school?

FOLLOW-UP

Research Problems Related to Trade and Industrial Education

What are the most effective placement follow-up techniques?

What effect does the pupil to teacher ratio have on employment success?

What are the most effective counseling tools to use in selection and placement of trade and industrial students in programs and jobs?

Is there a relationship between vocational preparation and job success?

What is the relationship between the degree of advisory committee involvement and program quality?

What curriculum characteristics contribute to student achievement?

What factors contribute to the development of successful training programs for local business and industry by vocational schools?

What level of technological stability is necessary in order to undertake cost-effective curriculum development and revision activities?

What factors contribute to the development of successful articulation models between vocational schools and community colleges?

What program standards are common to all of trade and industrial education?

Which student/industry follow-up data are most useful in program planning?

What significant changes in trade and industrial education programs and services has occurred in the last 5 years as a direct result of federal dollars?

What does research show on the effectiveness of trade and industrial education programs in preparing individuals for the world of work?

Is there evidence that appropriate over-all advisory councils have been successful in trade and industrial education program improvements?

Who has the responsibility for follow-up in the vocational technical school and how should it be done?

What correlation exists between student participation in VICA and subsequent employer satisfaction ratings?

What correlation exists between "open" and "closed" student selection and employer satisfaction ratings?

What relationship exists between daily program operation and subsequent placement in apprenticeship programs?

What correlation exists between program length and student placement and employer satisfaction?

FOLLOW-UP

Research Problems Related to Trade and Industrial Education

What are the implications for national curricula in those trade and industrial education areas that are universal (i.e., auto mechanic, watch repair, machine drafting)?

Does vocational education actually reduce drop out rates and to what extent?

Are we doing justice to any programs by conducting only one year follow up studies?

What is the basis by which vocational programs are eliminated from the curriculum?

What is the comparative longitudinal job impact difference between graduates of Industrial Arts, vocational cluster, and special vocational development programs?

What is the long term comparative impact of vocational students with proven reading skills vs. those with minimal skills?

FUNDING

Research Problems Related to Trade and Industrial Education

How has reduced funding affected the quality of T & I education?

What are the potential relationships between vocational education and the projected CETA revival?

Can industrial and/or foundation funding be utilized by T & I education as a means of alternative support?

What kind of mutually benefiting services can be provided by vocational educators and local industry?

In what ways do/can T & I teachers influence the funding of their programs?

What is the cost-benefit of T & I education and how does it compare with general education?

What are the alternative sources of funding for T & I teacher education?

Which methods of funding a program provide the most beneficial results?

What methods can be used to revise course content in order to meet the needs of business and industry?

How can the duplication of services provided by community colleges and local schools be justified?

How can T & I education be best presented to state legislators in order to gain additional funding?

What is the efficiency of federal funding in relation to job preparation and placement?

What approaches can be made with industry to provide funding for training?

What will be the source of funds for future?

How do we up-date curriculum?

What means can be used to recruit qualified faculty with industrial experience?

How can public relations be enhanced at federal, state, and local levels?

To what extent are state legislators providing funding for vocational teachers training?

Why is the teacher turnover rate higher for T & I education?

What is the future of T & I education in regard to federal recognition and support?

FUNDING

Research Problems Related to Trade and Industrial Education

How can we maintain the necessary levels of funding?

What is the relationship between levels of federal funding and the reduction of T & I programs?

What factors contribute to the development of successful training programs for local business and industry by vocational schools?

What level of technological stability is necessary in order to undertake cost-effective curriculum development and revision activities?

What factors contribute to the development of successful articulation models between vocational schools and community colleges?

Which existing T & I programs will be obsolete by the year 2000?

What new T & I programs will emerge by the year 2000?

How do we continue to recruit teachers from industry when the pay disparity between education and industry continues to widen?

What programs standards are common to all areas of T & I education?

What significant changes in T & I programs and services has occurred in last 5 years as result of federal support?

How to maintain and acquire equipment current to industrial needs?

What are the most cost effective methods of securing equipment and maintaining it?

What is the future of T & I vocational education without the influence of federal funding?

What funding procedures exist in other states to assure that vocational education programs receive their fair share?

With current block funding, how can we achieve equitable funding for individual education programs?

What is the relationship between levels of federal funding and the reduction of trade and industrial education programs?

GUIDANCE/COUNSELING

Research Problems Related to Trade and Industrial Education

How do guidance counselors help and hinder T & I student enrollments?

What are the qualities of a successful teacher/educator and do these influence future teachers/counselors?

Are T & I teachers being prepared to meet the requirements of P.L. 94-142?

What will be the effect of formal student counseling by T & I teachers?

What standardized tests can be used to help counsel the potentially successful traditional and non-traditional T & I student?

What factors influence the enrollment of non-traditional T & I students?

How much work experience is required of vocational counselors?

Why are problem students placed in T & I programs?

What is the relationship between program entry requirements and successful program completion?

Are there any vocational counselors? What are the required qualifications?

What are the guidance counseling duties of T & I teachers?

What advantage if any does sex have in obtaining initial employment?

How to use advisory committees most effectively?

How does career education tie in with T & I education?

Is there a relationship between the success rate of special needs students and specific career guidance activities?

Do T & I instructors use the NNCCVTE Network and if so how; if not, why not?

Why do students select a T & I field in secondary schools?

How can public relations be enhanced at federal, state, and local levels?

The significant factors which influence an individual to pursue a career in T & I education.

Why is the teacher turnover rate higher for trade & industrial education than other areas of vocational education?

What relationship exists between teachers' work experience and their teaching ability?

GUIDANCE/COUNSELING

Research Problems Related to Trade and Industrial Education

How can we overcome or change the image of vocational education for guidance counselors?

How can we infuse career education information into the public school curriculum?

How can T & I education best eliminate sexism in its programs and in industry?

What are some of the most effective methods of educate the handicapped in T & I programs?

What are the most effective counseling tools to use in selection and placement of T & I students in programs and jobs?

What factors in the educational system cause teacher stress?

What are the minimum math and reading competencies needed for success in specific occupations?

How can T & I instructors be utilized more effectively in providing vocational guidance activities?

What is the relationship between levels of federal funding and the reduction of T & I programs?

How effective is vocational counseling?

Do successful urban, rural and suburban vocational teachers all share the same competencies?

How do required career exploration experience effect vocational decisions?

What programs standards are common to all areas of T & I education?

How to develop more realistic guidance counseling activities?

How to serve non-traditional enrollments?

What measures are the best predictors of success in T & I programs?

Is there evidence that appropriate over-all advisory councils have been successful in T & I program improvements?

Who has the responsibility of placement in vocational-technical schools?

What correlation exists between "open" and "closed" student selection and employer satisfaction ratings?

SPECIAL NEEDS

Research Problems Related to Trade and Industrial Education

Are there significant psychological and performance differences between the mainstreamed and non-mainstreamed special needs student?

What is the relationship between the number of special needs courses taken and the effectiveness of a teacher working with special needs students?

What has been done by T & I educators to make the classroom laboratory more accessible to the handicapped?

What is the relationship between the T & I and the academic teacher?

How can the non-traditional student be best served?

What T & I courses and/or programs are recommended for special needs students?

What sources of funding are available for the updating and the replacement of equipment in T & I programs?

What is the degree of effectiveness that general advisory councils have had on the improvement of T & I programs?

How do special needs students affect the "average" T & I instructor?

Are special needs graduates being placed in the occupation they were trained in?

What is being done at the local level to integrate special needs students into the program?

Is there a relationship between the success rate of special needs students and any specialized career guidance they may have received?

Is there consistent T & I certification requirements across the country?

What is the future of T & I education in regard to federal recognition and support?

Are T & I education teachers currently being prepared to cope with requirements of P.L. 94-14?

What type vocational assessment appears to be more appropriate for disadvantaged and handicapped students?

What are the distinguishing characteristics of advisory committee members?

What new skills are necessary for teachers of students with special needs?

What are the most effective counseling tools to use in selection and placement of T & I students in programs and jobs?

What are the minimum math and reading competencies needed for success in specific occupations?

SPECIAL NEEDS

Research Problems Related to Trade and Industrial Education

What are the characteristics of successful T & I programs in urban areas with high concentrations of disadvantaged and unskilled students?

What are the most effective and relevant services being provided to special needs students?

What are successful methods of meeting the requirements of bilingual programs in T & I?

Are T & I teachers providing adequate instruction for special needs students?

What is the relationship between levels of federal funding and the reduction of T & I programs?

What program standards are common to all areas of T & I education?

What significant changes in T & I programs and services has occurred in the last 5 years as a direct result of federal dollars?

What should the role of state consultants be to local education units?

What are the implications of national curriculum in those T & I areas which are universal, i.e., auto mechanics, watch repair, machine drafting.

Where are resources of funds, equipment, materials and technical assistance for the handicapped student?

Is mainstreaming resulting in the increased dumping of incapable students in trade and industrial programs?

What effect is mainstreaming having on teacher unrest and drop out?

PROGRAM PLANNING/ACCESS

Research Problems Related to Trade and Industrial Education

What does industry really know or think about T & I education?

What are some strategies for implementation of open-entry/exit programs?

Can T & I teach for higher technology? How can outdated T & I programs be eliminated?

Are students prepared to accept responsibility of employment?

What relationship exists between successful and unsuccessful advisory committees and student achievement?

What curriculum changes will develop as a result of the micro-computer?

How does industrial arts tie in with T & I education on a career ladder education program?

What instruments can be used to determine community needs?

What new trade and industrial education programs will be needed in the 1990's?

How may we have effective participation in our advisory committee?

Is there consistent T & I certification requirements across the country?

What is the status of T & I enrollment levels across the country?

Are T & I teachers being prepared to cope with requirement P.L. 94-142?

What is the impact of computer and microprocessor technology upon T & I instruction?

What are the distinguishing characteristics of advisory committee members?

What are the major distinguishing characteristics of T & I programs at the secondary level, compared to Industrial Arts programs?

How does the content of T & I curriculum compare with the content of industrial technology programs?

To what extent could T & I programs be delivered better in industry or in the military?

What ways do current educational programs meet the on-the-job training needs of industry?

What resources are available for industrial trainers to upgrade their skills?

What are the minimum math and reading competencies needed for success in specific occupations?

PROGRAM PLANNING/ACCESS

Research Problems Related to Trade and Industrial Education

Which techniques lead to the reduction of sex role stereotyping in T & I education programs?

Do successful urban, rural and suburban vocational teachers all share the same competencies?

Do organizational development techniques effectively contribute to the curriculum development or revision process?

What is the relationship between the degree of advisory committee involvement and program quality?

What factors contribute to the development of successful training programs for local business and industry by vocational schools?

What level of technological stability is necessary in order to undertake cost-effective curriculum development and revision activities?

What factors contribute to the development of successful articulation models between vocational schools and community colleges?

What new T & I programs will emerge by the year 2000?

How do we continue to recruit teachers from industry when the pay disparity between education and industry continues to widen?

What are the key factors in achieving positive articulation between secondary and post-secondary programs?

What program standards are common to all areas of T & I education?

Which student and industrial follow-up data is most useful to program planning?

What significant changes in T & I programs and services have occurred in last 5 years as a result of federal dollars?

Where is the central data gathering center for industrial education?

Have occupational inventories been conducted in past 5 years related to industrial education programs and, if so, where can this information be found?

What defense jobs should industrial education be training students for?

What correlation exists between student participation in VICA and subsequent employer satisfaction ratings?

What correlation exists between "open" and "closed" student selection and employer satisfaction ratings?

What is the minimum time to train individuals for T & I type jobs?

PROGRAM PLANNING/ACCESS

Research Problems Related to Trade and Industrial Education

What are the minimal basic skills requirements for successful completion and placement from T & I programs?

What are the implications for a national curriculum in those T & I areas which are universal, such as auto mechanics and watch repair?

What are the trends in the labor market and the occupational outlook?

Which state level personnel best assist local level program planning and development?

Why aren't secondary trade and industrial education programs producing graduates who fit right into work positions?

Should trade and industrial education be offered more at the post-secondary level than the secondary level?

Do state level supervisors help or hinder T & I program planning?

What is the relationship of block granting to the impact potential and goals of T & I education?

How can the public image of trade and industrial education be enhanced at the national, state and local levels?

What are the professional development needs of the adult T & I educator?

What is the current relationship between academic and T & I teachers?

What can be done to tie in vocational education programs with industrial training and the military?

What is the cost-benefit of T & I education as compared to general education?

What kinds of in-service training programs are being provided to help teachers meet contemporary needs?

What are the successful methods of meeting the needs of the limited or non-english speaking student in T & I education?

What are the common curriculum components of a technical training/human resources development degree program and a traditional T & I teacher education program?

What part should traditional T & I teacher education play in an interdisciplinary curriculum designed to prepare human resources development/technical trainers?

Have task analysis of occupations in industrial education been conducted in the last 5 years and, if so, where can this information be found?

PROGRAM PLANNING/ACCESS

Research Problems Related to Trade and Industrial Education

How should instruction be sequenced to support the transition from T & I programs to apprenticeship programs?

Would rotating teachers between school and industry result in better and more realistic instruction?

Do we really need trade and industrial education?

What new courses in emerging occupations have been introduced to our secondary schools in the past five years?

Does the absence of adult evening programs reflect a specific philosophy by the vocational director?

What is the actual impact of post-secondary vocational technical education on industry?

How can school administration support be developed for vocational education?

Is there a relationship between a vocational school director's professional development plan and teacher morale?

What incentives can be offered to trade and industrial education instructors for their involvement in VICA?

SEX EQUITY

Research Problems Related to Trade and Industrial Education

How can the non-traditional T & I student be best served?

What standardized tests are effective in the identification of potentially successful traditional and non-traditional T & I students?

What factors contribute to the enrollment of non-traditional students in T & I programs?

What factors contribute to the attraction of male and female students to different T & I programs?

What are the best strategies for overcoming sex role stereotyping in trade and industrial education?

What advantage does sex have in obtaining initial employment?

What is the future of T & I education in regard to federal recognition and support?

Are T & I teachers being prepared to cope with requirement of P.L. 94-142?

What are the distinguishing characteristics of advisory committee members?

How can T & I education best eliminate sexism in its programs and in industry?

What are the most effective counseling tools to use in the selection and placement of T & I students in programs and jobs?

What leads to the reduction of sex role stereotyping in T & I education programs?

To what degree are traditionally male T & I programs enrolling female students?

What does research show on the success rates of males and females enrolled in programs non-traditional to their sex?

Is there a relationship between the vocational director's philosophy and the promotion of female staff members?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

What is the importance of post-secondary vocational education in meeting manpower needs?

What effect do teacher unions have on the professional development needs of teachers?

What is the effect of curriculum consortium (VTEC, etc.) on professional training needs of T & I teachers?

To what extent is competency based teacher education implemented in pre-service programs?

What is the most effective delivery system for updating the technical skills of the T & I instructor?

What is the importance of teacher-administrator as role models?

What is the relationship between the psychomotor domain and skill acquisition?

What states (or institutions) have a bonafide set of standards for teacher preparation?

What is the technical conceptual structure of teachers (see PHD's, dissertations of Pratzner L969, Smith L970, Padelford L972 - University of Minnesota)?

What are the teaching styles of trade & industrial teachers?

What are the personality and behavior factors which best predict teaching success?

Should occupational experience be the major criteria in teacher selection?

Can administrative personnel best be prepared in a campus based or field based program?

How are collegiate programs of teacher education financed in the United States?

What is the relationship between years of occupational experiences and student achievement?

What should be the pay scale for T & I teachers?

How can we devise a system for keeping T & I instructors updated in new technical fields?

How are T & I teacher educators involved in program planning, leadership and teacher certification?

Is open entry/open exit valid for T & I education programs?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

Where are outstanding T & I teachers to be found?

Does competency based instruction work for T & I?

How much trade experience is needed by a T & I teacher?

Are T & I teachers current in content area of their program?

How can unity be accomplished in T & I?

What are minimal survival skills for beginning T & I teachers?

Why can't we establish national standards for T & I teachers?

What curriculum changes will develop as a result of the micro-computer?

What are the predictors of success of a teacher that help in candidate approval or rejection?

What characteristics do successful teacher educators possess and do these get passed onto future teachers?

How do faculty keep current with changes in technology?

What means can be used to recruit qualified faculty with industrial experience?

When and how will T & I education catch up with the rapidly changing technologies?

What is being done at the local, state and national levels to update teachers in the field of future technologies?

Should all teachers pass minimum competency exams in basic subjects?

What general and professional skills are necessary for teacher education?

What is the state of the art for T & I teacher education?

Can teaching be successful without teacher work experience?

Should postsecondary teachers be certified differently than secondary teachers?

Why do T & I teacher educators need to meet work experience requirements for college level employment?

How often need T & I teachers return to their trade specialty in industry for updating skills?

How can vocational education certification among states be standardized?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

Do T & I teachers have less professional commitment to teaching because they have a trade to fall back on?

How many changes in technology in the field trigger curriculum, instruction or equipment changes in the classroom?

To what extent is technological growth reflected in the curriculum?

What relationship exists between good teachers and students performances?

A comparison of state systems for provisional personnel development and their effectiveness.

Which individuals make the best trade and industrial education teachers?

Why is the teacher turnover rate higher for trade & industrial education than the other areas of vocational education?

What level of reading is required at entry and middle level employment for T & I occupations?

Does teacher preparation affect the attrition rate of T & I students?

Is there consistent T & I certification requirements across the country?

What current relationships exist between T & I instructors and academic teachers?

What is the future of T & I education in regard to federal recognition and support?

Has the EPDA federal program improved the quality of leadership in T & I education?

Are T & I teachers being prepared to cope with requirements of P.L. 94-142?

Is there an effective articulation process between area vocational school and colleges?

What are the basic minimum teacher competencies required of T & I teachers from industry?

How can school systems implement teacher technical upgrading of T & I teachers as industry does with employers?

What are the most effective placement and follow-up techniques?

How can we best use the existing research on instructor expectations and student behaviors in T & I training?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

What relationship exists between teachers' work experience and their ability to teach, student achievement?

What effect will decreased funding have on teacher shortages?

How can we motivate certified vocational teachers to continue on toward the B.S. degree?

What are the best approaches to recruiting and training T & I teachers?

How can T & I education best eliminate sexism in its programs and in industry?

What are some of the most effective methods of educating the handicapped in T & I programs?

To what extent could T & I programs be delivered better in industry or in the military?

How will the microcomputer affect T & I education?

What is really causing teacher burnout?

Which teacher behaviors influence student learning at the secondary and the post-secondary level?

What relationships exist between teaching style and learning style?

What special training is being provided to T & I teacher education staffs to deal with contemporary issues?

How can post-secondary schools better prepare trainers/instructors for the industrial setting?

What resources are available for industrial trainers to upgrade their skills?

What relationships exist between teachers' occupational competence and their teaching competence?

What factors cause teacher turnover?

What are the successful alternative methods of pre and in service T & I teacher education?

What are the factors that limit the entry of handicapped and disadvantaged into regular T & I programs?

What are the most effective and relevant services being provided to special needs students?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

Which techniques lead to the reduction of sex stereotyping factors in T & I education programs?

How can T & I instructors be utilized more effectively in providing vocational guidance?

What are successful methods of bilingual T & I education?

How can T & I programs become more responsive to the changing needs of industry?

What is the relationship between levels of federal funding and the reduction of T & I programs?

What is happening to certification regulations as teacher populations decline?

Do organizational development techniques effectively contribute to the curriculum development or revision process?

What technical skills will the T & I professional have to acquire by the year 2000?

Which existing T & I programs will be obsolete by the year 2000?

What new T & I programs will emerge by the year 2000?

What are the components of cooperative skill exchanges between university facilities and their industrial peers?

What steps must be taken to recruit and retain secondary and post-secondary T & I professionals?

What are the computer literacy components of T & I teacher education programs?

How can we establish better linkages between T & I teacher education and industrial training?

How can we market T & I teacher education to more clients?

What are some innovative approaches used for teacher preparation during summer sessions?

What program standards are common to all areas of T & I education?

Has occupational inventories been conducted in past 5 years related to industrial education programs and where can this information be found?

What tasks analysis of occupations in industrial education have been conducted in past 5 years and where can they be obtained?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

What defense jobs should industrial education be training students for?

What can be done to assist instructors in making better use of, or of using advisory committees to their fullest extent?

What will it take for T & I teachers to fully understand student leadership and get involved in VICA?

How come T & I folks are frightened of advisory committees?

How can T & I teachers be taught time management more effectively?

What relationship exists between industry and the local education agency for training?

What correlation exists between a teacher's occupational experience and success of students in finding jobs?

What correlation exists between a teacher's occupational experience and employer satisfaction of program completers?

What relationship exists between secondary T & I graduates and their subsequent success in post-secondary technical programs?

What correlation exists between program length and student placement/employer satisfaction?

Do personnel from trades make better teachers than graduates of colleges with little occupational experience?

What can state consultants do to cause teacher preparation institutions to stay current with technology?

What factors contribute most significantly to student achievement?

What professional courses are the most important for beginning non-degree trade and industrial instructors?

What could state teacher institutes do toward the technical training as well as professional preparation of instructors?

What requirements do states have for vocational teacher upgrading and other staff development?

How can the public opinion of T & I education be enhanced at the national, state and local levels?

To what extent are T & I teachers involved in professional associations beyond AVA?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

What are the professional development needs of the adult T & I educator?

What are the major distinguishing characteristics of T & I programs at the secondary level compared to I.A. programs?

How does the content of the T & I curriculum compare with the content of the industrial technology curriculum?

What can be done to tie in vocational education programs with industrial training and the military?

What part should traditional T & I teacher education play in an interdisciplinary curriculum designed to prepare human resources development/technical trainers?

What are the common curriculum components of a technical training/human resources development degree program and a traditional T & I teacher education program?

How can we develop greater unity between T & I and technical education programs and industry?

How can we better serve non-traditional students?

How can we motivate T & I teachers to become more active in professional organizations such as the AVA?

What are the national implications of competency based T & I teacher certification?

What are the certification requirements for T & I teachers throughout the country?

What relationship exists between the success of the instructor in the classroom laboratory and their amount of involvement in professional organizations?

How can quality teachers be recruited and retained?

How can the enthusiasm of the first year teacher be retained?

Would regular updating of methods and classroom management techniques improve classroom/laboratory instruction?

Is there a relationship between teacher success and age?

What is the relationship of professional development to teacher burn-out?

Can the relationship between teacher traits and student discipline be predicted?

Is there a relationship between the condition of classroom/laboratory equipment and a teacher's work background?

TEACHER PREPARATION/UPGRADING

Research Problems Related to Trade and Industrial Education

What are the necessary professional education courses needed by the T & I person from industry?

What techniques work best for recruiting trade and industrial education teachers?

Can area vocational technical school students be recruited for preservice trade and industrial teacher education degree programs?

Appendix

Correspondence and Instrumentation

INDIANA, PENNSYLVANIA 15705
Vocational Personnel Preparation • Reschini House • 412-357-4434

March 3, 1982

Dear Colleague:

The American Vocational Association Trade and Industrial Education Research Committee is at present establishing a list of potential research problems related to Trade and Industrial Education. Ultimately, the list will be distributed to individuals who are seeking to identify and study problems in our field. Dissemination of results will also be made at a future AVA convention. As one who is knowledgeable about problems existing in the T & I area, we are asking you to assist us in developing this comprehensive list.

Please complete the attached form and return it in the stamped, addressed envelope within the next two weeks. Your prompt attention to this request is greatly appreciated.

Sincerely,

Tom Walker

For the Trade and Industrial Education
Research Committee

RESEARCH PROBLEMS RELATED TO TRADE AND INDUSTRIAL EDUCATION

Directions: Please list eight or more problems related to Trade and Industrial Education which might be researched in the future. In order to maintain consistency, problems should be stated as questions. Also consider the category each problem might fit into. Select one or more categories from the following list and place corresponding letter(s) beside each question:

A. Advisory Committees	E. Placement	I. Special Needs
B. Articulation	F. Follow-up	J. Program Planning/Access
C. Curriculum	G. Funding	K. Sex Equity
D. Delivery/Instruction	H. Guidance/Counseling	L. Teacher Preparation/ Upgrading

Several examples are presented below followed by spaces to provide your problems stated as questions.

Example: What relationships exist between teacher behavior and student achievement? D,L

Example: What are the better in-school predictors of employment success? D,F

1. _____ _____
2. _____ _____
3. _____ _____
4. _____ _____
5. _____ _____
6. _____ _____
7. _____ _____
8. _____ _____
9. _____ _____
10. _____ _____

Many thanks for your assistance! Please return to:

Dr. Tom Walker
Vocational Personnel Preparation
Indiana University of Pennsylvania
Indiana, Pennsylvania 15705